

Mies van der Rohe Carr Chapel, Chicago, Illinois, 1949-1952.

An architectural appraisal in connection with a separate musical appraisal (not included here—see: Burton (2018) for the musical interpretation and explanation).



archiseek, 2009

photograph 1: Carr Chapel, Chicago, Mies van der Rohe, 1949-1952

In association with a musical appraisal carried out separately, this paper seeks to appraise the Carr Chapel from an architectural point of view.

The Brief

Apparently, the building was commissioned by Conkling E. Wallace, Bishop of the Episcopal Diocese of Chicago (*wikiarquitectura*; Pérez, 2015), as an attempt to make some reparation of anti-religious feeling after World War Two. He proposed the location of the Illinois Institute of Technology (IIT) as suitable, being in the heart of where students learn about modern technology (*wikiarquitectura*; Pérez, 2015), and in the ‘atomic age’ (Knoll, 2018). At that time the IIT was involved in technological

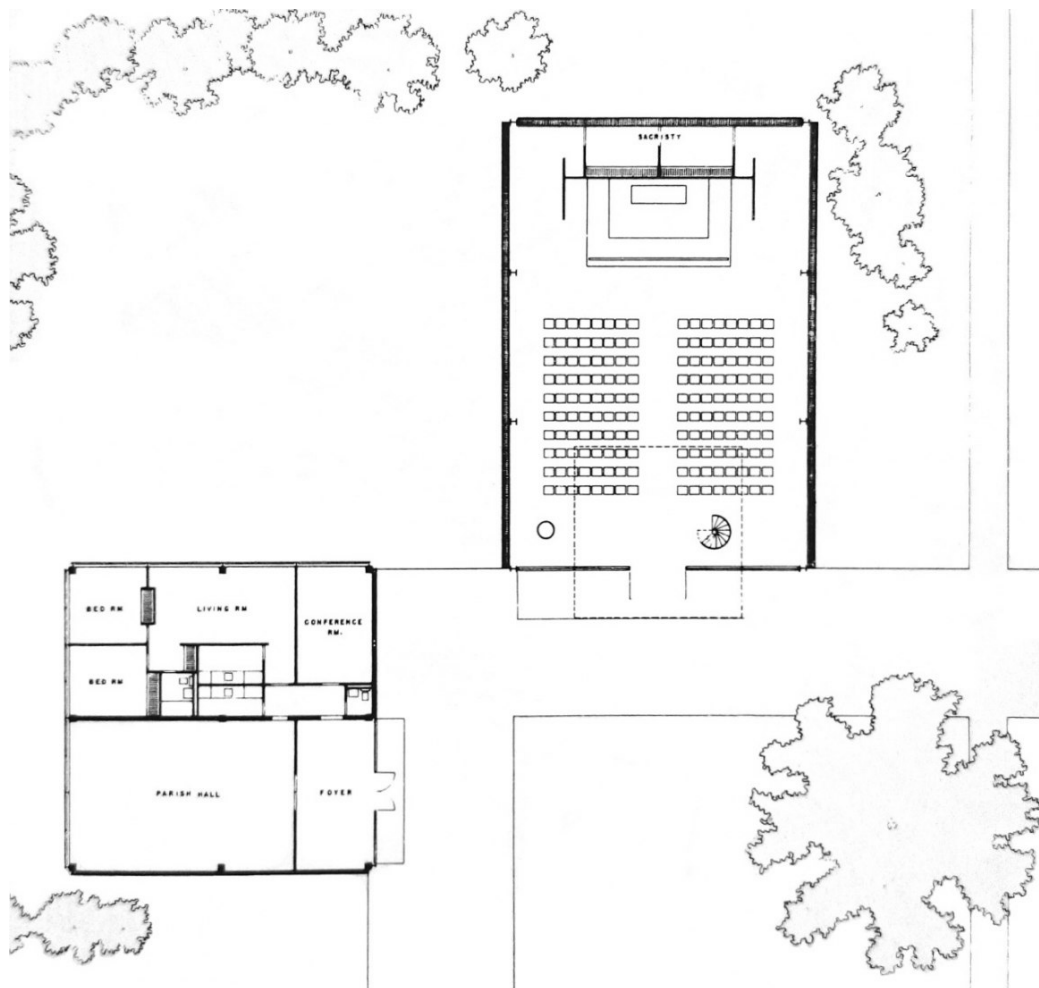
efficiency for the war effort; since then it has gained in architectural prowess as a legacy of Mies van der Rohe, especially with the S. R. Crown Hall built in 1956 on the IIT campus (Society of Mies van der Rohe, 2016). The name of Carr comes from Robert F. Carr (February 1st 1931-18th May 2018) (Dignity Memorial, 2018) who possibly put up the remainder of the money where the word ‘Memorial’ in the building title probably refers to such funding, since Robert F. Carr only died in 2018 and would have been very much alive when the building was commissioned. In a way, Robert F. Carr echoed the founding situation, being a military person, of high rank, most of his working life, yet with a connection to the Episcopal church (Dignity Memorial, 2018). Whilst connected with the war in Vietnam there seems to be a peaceable element to his activities in decommissioning and helping to hand over helicopters to the Vietnamese army at the end of the hostilities. He might well have been more of a tactician and academic than a front line fighter. (Dignity Memorial, 2018).

The government had a hand in forming the brief, wanting the church to be open to all ‘beliefs’ (Pérez, 2015). The Mies van der Rohe Society (2016) called it ‘the administration’ that was responsible for this open remit. This could be implied to mean the IIT itself, although it is not unfeasible to think of some government pressure being brought to bear. The source *wikiarquitectura* uses the word ‘faiths’ instead of ‘beliefs’, yet there is a disclaimer about the quality of translations in the document. This document seems to have some derived information and yet a feel that there is perhaps a then current student providing the information—this is conjecture, but it does seem to have some reliable information and useful photographs. ‘Faiths’ implies religions, whereas ‘beliefs’ implies a wider set of possible belief systems, including all or none. It is still called a ‘chapel’, implying some sort of religious use. The original proposal and plans drawn by Mies van der Rohe include a ‘complex’ of a ‘parish church, a chapter-house and a chapel.’ (Pérez, 2015), which definitely indicates a religious intention (*figures 1 & 2*). This is borne out by drawings some of which are shown here (in *metalocus*, Pérez, 2015). Pérez (2015) suggests that the government was responsible for cutting down to one single building, ‘although there is no proof of this in the archives’. So, whether, the smallness of the project was as a result of politico-religio pressure, or Mies wanting to apply his famous motto “less is more” (Pérez, 2015, Burton, 2018) may be conjecture, but Mies did say in relation to

this project, according to *wikiarquitectura* and borne out by The Mies van der Rohe Society (2016):

[It] was not meant to be spectacular [, it] was supposed to be simple, and in fact, is simple but in its simplicity is not primitive, it is noble, and its smallness, is great indeed monumental... (Mies van der Rohe).

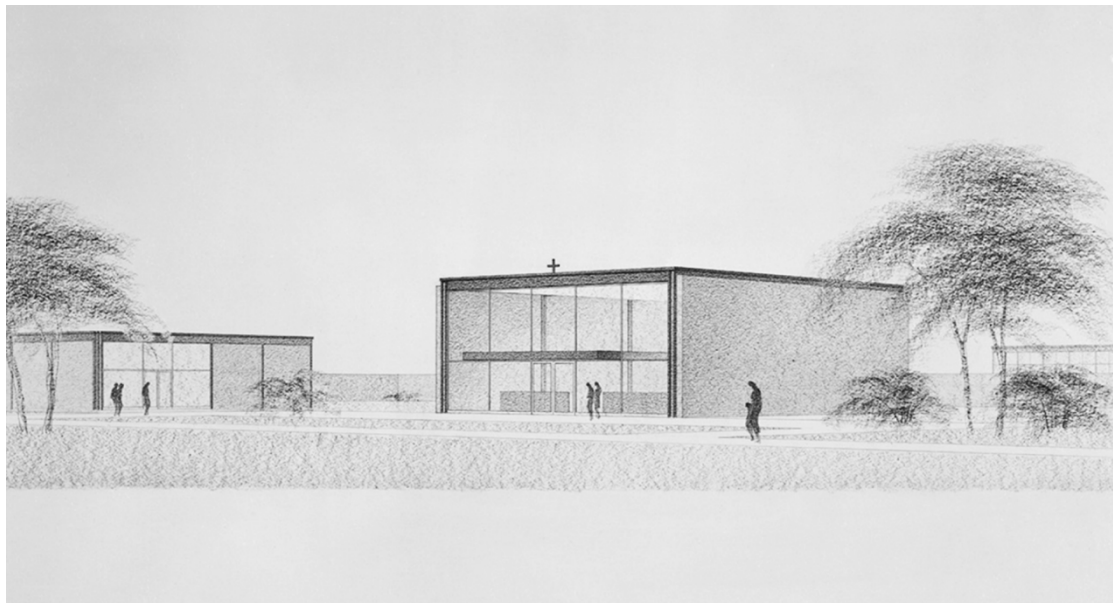
Jentes (2010) in her role as the Mies Society Director, as in 2010, endorsed much information in this paper, including saying that the church's importance had grown to be daily in use as a spiritual place for Protestants, Catholics, Jews, Muslims, Hindus, Buddhists, pagans, secular humanists, Baha'i, Sikh and others.



Metalocus

figure 1: Initial Plan for Carr Chapel, Mies van der Rohe, 1949-1952

Whether there is any significance to this or not, but it is noticeable that where, obviously in subsequent improvements, a security light, or some sort of simple overhead light, has been added to over the main entrance, as in *photograph 1*, the sketch below indicates a cross. This surely is more significant, rather like a Lutyens post, which is a drawing together point of significance, a plain adornment that can embellish a rooftop without over-the-top decoration. Here the message is plain, a simple cross. Whilst the light fitment has obvious utilitarian, and with modern day health and safety, considerations in mind, there is a crudity of an industrial type lamp instead of a bare cross against the skyline.



metalocus

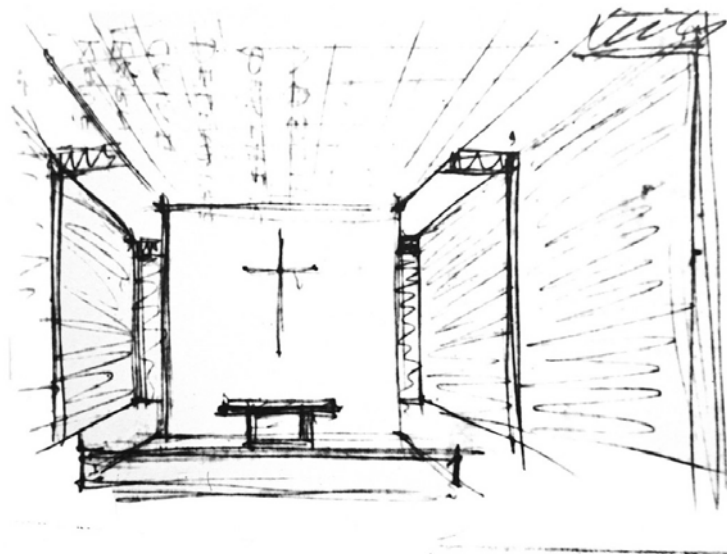
figure 2: Initial sketch of complex, Carr Chapel , Mies van der Rohe, 1949-1952

Furthermore, even though the inside has been modified somewhat, by later repairs (2008-2013) (*wikiarquitectura*; Pérez, 2015) (2008-2014: IIT, edu. Paul V. Galvin Library, undated) and additions of toilets (Pérez, 2015), the essential layout of altar and cross have remained, which are crucially religious. Both sources, *wikiarquitectura* and Pérez, state that the cross and curtain were toned down in significance due to the government interference. According to *wikiarquitectura* the curtain was ‘controversial’ and used to hide items of religious reference.

A preliminary sketch from the *Metalocus* source via Pérez (2015) shows a greater prominence of the internal cross (*figure 3*).

Whether there is anything to this, the altar table looks like a bench, which the *Archiseek*, 2009 photograph above shows as outside (*photograph 1*). Is this bench a reflection of the altar inside, yet a later addition?

Mies van der Rohe apparently wanted to design a cathedral; this was never realised (Knoll, 2018). It is fair to say, then, that he intended some religious signification to this building. The Mies van der Rohe source (2016) states in connection with the use of brickwork, apparently Mies's only use of brick on its own for a wall—that is as a supporting structural element, as well as an enclosing envelope to keep out the weather, as well as look nice—was meant to ‘draw the eye upward, making the Chapel a place for contemplation’. Furthermore, unlike as with a cathedral, Mies did not want to encourage ‘a longing to become lost’, but ‘that visitors would feel “the hope of finding oneself” in the small space.’.



metalocus

figure 3: Sketch, Carr Chapel, Mies van der Rohe, 1949-1952

The repairs and alterations that both sources (*wikiarquitectura*; Pérez, 2015) mention consisted of complete roof renewal, the glazing and framework, rebuilding of brick ‘corners’ or quoins, the ‘renovation of the terrazzo floor’, cleaning and repair of

internal brickwork, work to heating and electrical systems, including new lighting, air conditioning and the toilets as mentioned. The cost was in the region of \$1 million and was carried out by Harboe Architects (*wikiarquitectura*). T. Gunny Harboe taught at IIT and involved students, the 'Faculty of Architecture Dean Donna Robertson and other officials of IIT' as well as the Mies Society (*wikiarquitectura*; Knoll, 2018). It is then apparent that the architecture of Mies and especially of this chapel was held in such high regard as to warrant this expenditure. Indeed it was celebrated on 21st October 2014, with a rededication ceremony, including T. Gunny Harboe, the restoration architect, a Mies van Der Rohe society board member, Barbara Donnelley, Lyn Meyer, spiritual director at IIT and Aron Dunlap, an assistant professor at Shimer college, ending with a concert by the Civitas Ensemble and a reception (Knoll, 2018). This vouchsafes the esteem and religious credentials of the building. According to Katrina Burton (2018), Mies said that he 'designed it for the students and staff at the school' and that 'they will understand it'. They obviously do and so do many more, including Katrina Burton and the visitors to the Access Contemporary Music and Open House Chicago scheme (2015), who heard music evoking the chapel (Burton, 2018).

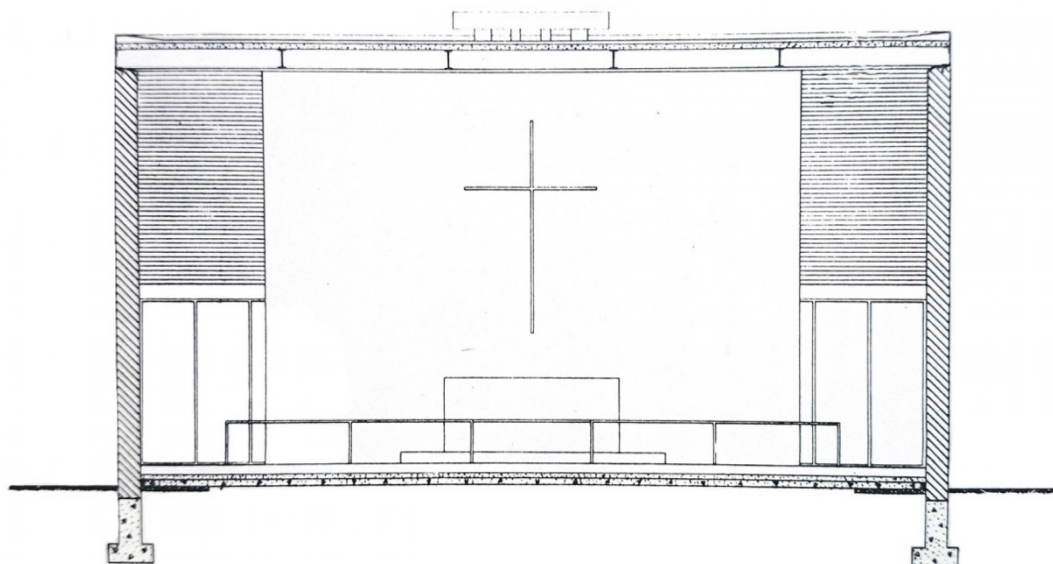
The Architecture

This critique is a personal response to the imagery and information available. Starting with some negative points the intention is to end with celebrating the building as Katrina Burton does (2018). In fact negative points soon turn to positive points of admiration. There is an integration, that where there are any negative points, they soon turn to positive, in the same way that IIT Mies admirers are prepared to pay a substantial sum to restore and upgrade a relatively small building. There is something about this building, that despite any faults it is in the final analysis impeccable.

One of the first points noticeable is the roof flat with the flush fascias or eaves (*figures 4 & 5*). Normally, an overhang and careful detailing is required here to avoid damage from rainwater. In fact, the rainwater is channelled to the front and must simply drip down the front façade. Mies does say "God is in the detail" (Perez, 2015). The design is simple, which would not meet modern standards, or codes as they are called in America, but of course they were sufficient for the time of construction.

The Society for Mies van der Rohe (2016) as well as the Director, as at 2010 (Jentes, 2010), give an account of Mies's design principles as evolved in the USA, since leaving Germany and the Bauhaus, as largely in line with the Carr Chapel. He evolved a formula of using glass, aluminium and steel framed construction, with an emphasis upon materials, constructional details where sometimes, in effect, form followed function. He is quoted (Mies Society, 2016) as saying "Form is not the aim of our work, but only the result"; on other occasions he would take a functional approach, and on another a plainly aesthetic approach such as with another development 860-880 Lake Shore Apartments of 1951 where he inserted technically redundant I beams welded to mullions simply because they "looked right" (Mies Society, 2016); he was concerned with modularity, grid layout, adhering to 24feet by 24 feet by 12 feet or some near arrangement based upon those dimensions, largely avoiding more than one storey to avoid the Chicago fire codes, and a master plan where buildings were offset to create interspersed green areas (Mies Society, 2016). Jentes (2010) encapsulated this concisely as:

Mies created the Chapel with the same simple materials he used in the rest of the IIT campus: brick, steel, glass, oak panels, travertine marble, and terrazzo floor. It is in keeping with the "skin and bones" style for which he is known, where Mies tries to pare down the structure to its most beautiful, bare essentials.



metalocus

figure 4: Early section, Mies van der Rohe, Carr Chapel, 1949-1952

Other points emerging from this cross section highlight Mies's simple approach and love of symmetry (Summers, 1996 in Mies Society 2016). The foundations are simple strip form concrete with below ground walling as one monolith. The flooring looks simple, as planks laid on the ground, with the terrazzo laid on top and with possibly some form of insulation adjacent to the walls. The walls are simple 9 inch brickwork, in English bond, probably for both strength and looks. The colour as visible in several drawings shows a matching to neighbouring buildings and in fact is possibly one of his favourite colours because he has used a similar colouration elsewhere, for instance in the Lemke House of 1932 in Berlin, Germany (Mies Society, 2016). The colour is warm and almost 'pretty' showing Mies's heart and courage where it is widely noticeable that architects for whatever reasons often choose harsh coloured bricks. *wikiarquitectura* comments upon the interior's division into a series of 'spaces articulated by different transitions, a step in the terrazzo floor, stainless steel railing', the arrangement around the altar, which has a plinth and the other accoutrements described elsewhere. This transition actually carries on to the outside step which is a precursor for the step and plinth inside.

The detailing of the floor and glazing is both simple and appealing. The floor has an arrangement of composite concrete and screed with a joggle joint to help tie in the external front base slab with the external apron step on top, with some insulation. The brick side window fixings are straightforward. The vertical window fixings seem almost naïve in their simplicity. The bottom one seems to be in a position where it would be prone to rust. The glazing is single. Perhaps in the replacement they are double. Perhaps to be really prescient they could be triple, but then one would need to take into account the prevailing internal and external environment. The detailing is of square fillets of timber or aluminium with beading both sides, a minor detail of symmetry. The window system, like the top roofing detail, the 'cap', is flush with the outer face of the brickwork. There is no set back to create a shadow line or provide any relief from the weather. It works, but does it? It works visually in its elegance of simplicity. But, the whole glazing had to be replaced in 2008. At the roof level the internal junction with the wall seems a suspect case for condensation.

Apparently, the whole roof had to be replaced, but the new roof does not show any internal insulation at the perimeter, yet the existing design did show some

insulation on top of the concrete pots which lie across the tops of the joists or I beams, thus creating a 'warm roof', perhaps an early example of such. The pots seem to be just butted up against each other without any grout in between. This would accommodate some movement which has always got to be allowed for since all materials expand and contract with temperature differences. Such pots with downstands abutting, especially when jointed with grout, form Tee beams with central sections acting as cantilevers. This can be quite strong and allow for carrying loads such as snow. All the sections seem quite slender, but in all the photographs the structure looks intact. The new works would in all probability have involved new structural calculations, so this is a groundless concern. The finish to the roof steelwork is quite simply lovely and would without doubt be something that would have pleased Mies van der Rohe. The jointing or welding is hidden and as such does credit to the roof design. The getting away with not adding any further embellishment except for lighting and somewhere, not easily visible, some air conditioning, seems to be in the spirit of Mies's "less is more", his sparseness.

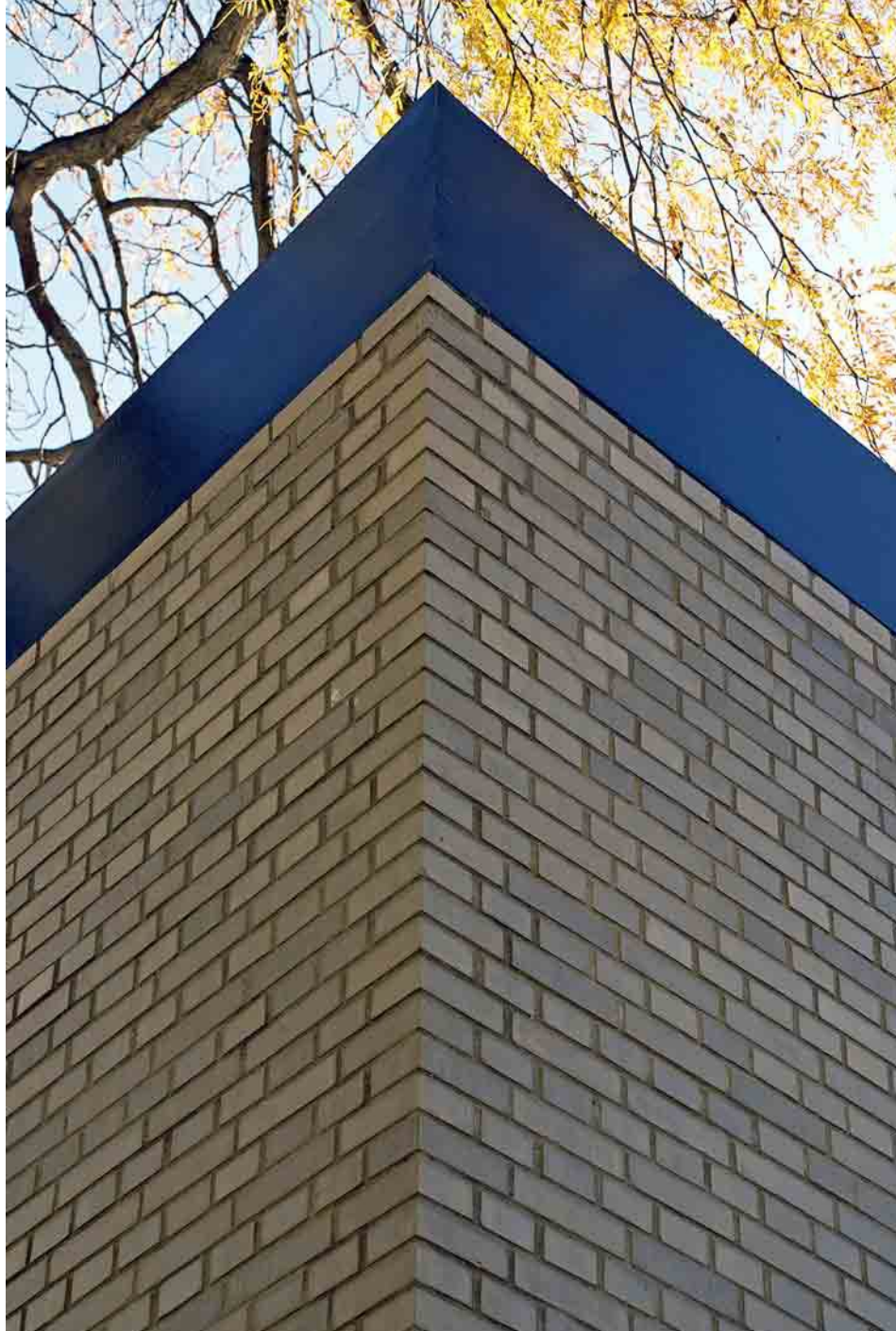
Incidentally, the arrangement on top of the roof seems to indicate an extractor of some sort, so possibly Mies did think of air extraction, a ventilation system of some sort. This would justify a later addition of an extractor as part of an air conditioning system to be placed on the roof.

To then consider the repairs and renewals, from the point of view of what is left after all is stripped out, there is a bare shell left. So, this comes back to the magical decision to retain what is left and then renovate, replacing where necessary, what Mies first envisaged.

Firstly, there are two minor points that are obvious when looking at the repairs carried, to the brickwork bonding of one corner, on the front right hand side, and untidy marks left on the brickwork to the other front corner. These are shown below.

There is a straight joint at the top on the left hand side of the right hand quoin, to the 4th, 5th and 6th joint. A purist about detail such as Mies may have worried about something like this where the bond does not work out exactly. In his favour the bond, the layout of the bricks for the openings, here of the front window and door assembly works out perfectly. This is surely the mark of an architect who thinks about details. However, the Mies van der Rohe Society historical survey with comments (2016) shows that Mies could be cavalier at times, which only goes to show his humanity. Despite being a fastidious perfectionist, he could still drop his guard and

come out with a surprising design detail. As a musical corollary, it is like a composer who does not always compose as expected and surprises the listener from time to time.



metalocus

photograph 2: Straight joint detail to top left hand quoin, Carr Chapel,
1949-1952



metalocus

photograph 3:Mark to brickwork top left hand corner

To recapitulate the remedial and upgrading works carried out including adding in other items from all the sources (Jentes, 2010; *wikiarquitectura*; Mies Society, 2016), are:

New roof, including possible re-design or partial re-design

Clean underside of concrete roof pots (pleasing to the sight and adding light reflectance)

Internal brick cleaning and pointing (pleasing Jentes and others, 2010)

External brick cleaning and reconstruction of corners or quoins (with some reservations as pointed out above)

New glazing and front entrance complete (including the new configuration letting in more light and changing the look slightly, which some may think for the better)

New Electrical system, including new lighting

New air conditioning system (situated behind the curtain)

Removal of built up items barring sole light source from front façade

Removal of organ (The Organ Historical Society, 2016) which somehow appeared then mysteriously disappeared

Renovation of timberwork, doors (which must have appeared from somewhere over time), panelling (possibly as per the doors) and 2 No. side benches (probably original and 'floating' as Mies's original design)

Renovation of terrazzo flooring

Curtain renewal by Donghia Inc. donation as Italian Mies design

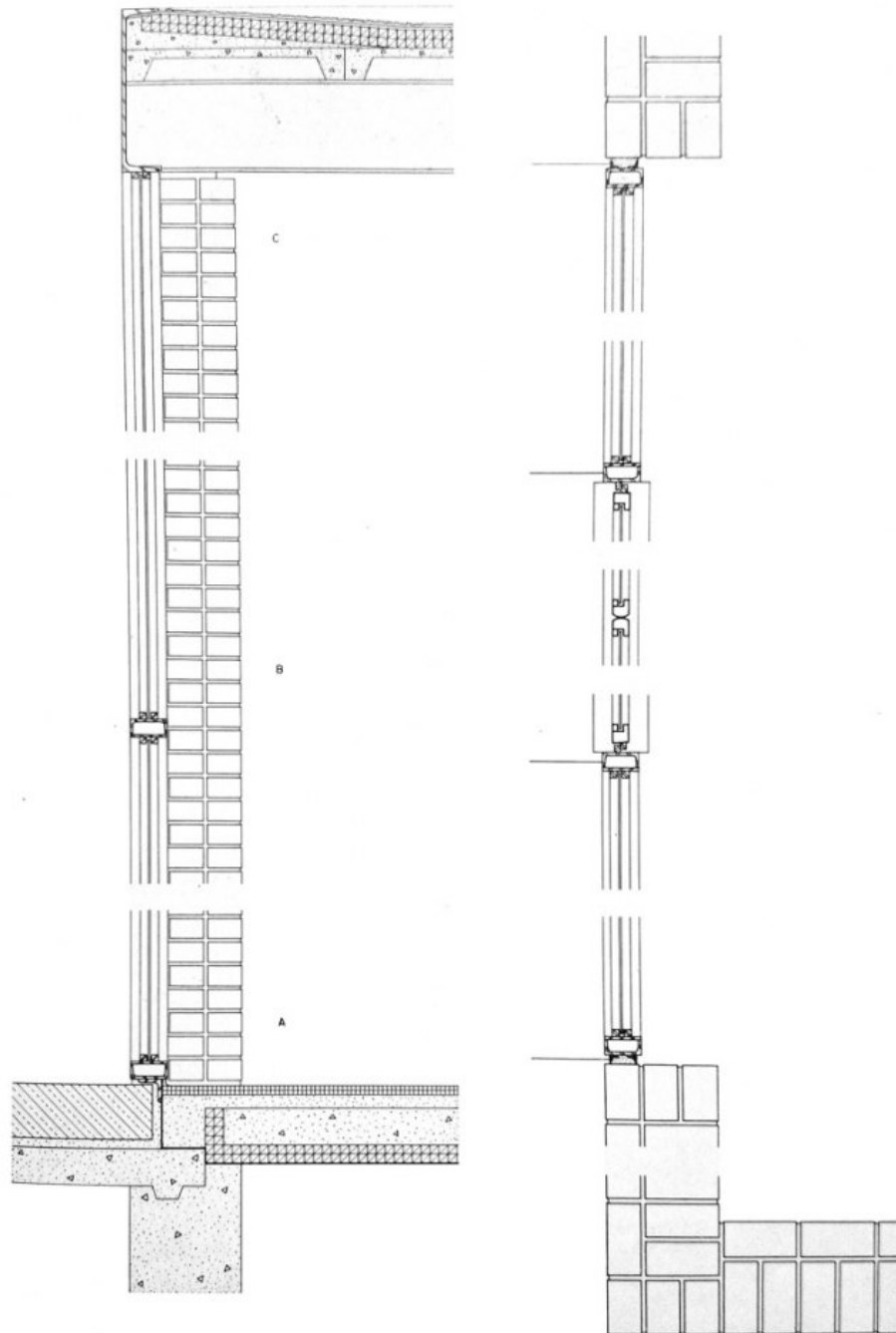
Creation of ADA (American Disability Act) compliant rest room and passageway and air conditioning

In today's terms that might be worth approximately \$1,300,000. 'Lead gifts' were received from 'Barbi and Tom Donnelley, Colin and Tracey Kihnke, the Regenstein Foundation and Jane Moore Black. The initially 'controversial' curtain involved much work and sounds like a delightful detail in which Mies involved himself. According to the Mies Society (2016), Mies's assistant of later years, Gene Summers, personally oversaw the complete faithful remaking of the curtain, the weaving in Italy of pongee silk together with fire retardant fibres, sewing and pleating carried out gratis by Cornel Erdbeer, an obvious expert, all bringing the initial simplicity and textural 'palette' of the 'heavy silk and creamy' colour to match the Travertine marble of the altar and the masonry. If the curtain was initially to disguise any religious connotations of the Carr Chapel, there are numerous photographic records to show that the Chapel has been consistently used for services. According to the Mies Society, 'Since its completion in 1952, the Chapel has hosted a weekly service on Sundays, as well as weddings and a plethora of other events, both religious and secular.'. In this way, it would seem that it has met Mies's aims.

In answer to frequent questions, Justine Jentes (2010) sums up what the restoration was all about:

Donors are engaged by this project because they want to help provide a welcoming spiritual center for the IIT community and because they are intrigued by Mies' only religious building. IIT and the Episcopal Diocese built this Chapel to unify the realms of science and spirit. Restoration of the Chapel is a commitment not only to preservation of an architectural gem, but to the nurturing of students, faculty and staff as whole persons.

Perhaps to that can be added more people than just those associated with IIT, but a wider community reaching across the world. This little 'gem' as Jentes calls it is almost a miracle in itself, a mustard seed that continues to grow. Despite any design pitfalls, leading to the necessity for largescale renewal and repairs—although some of the works would be brought about by newer tighter regulations than were pertaining when Mies designed the building—the patent goodwill of everyone who seems to come into contact with the building, including those funding works that in many other similar situations would be ruled by a cost accountant or quantity surveyor as non-feasible, is miraculous. This little 'shoe box' with a tight fitting lid with windows cut in at one end somehow speaks for more than just a little building.



metalocus

*figure 5: Early cross sectional drawing, showing roof, wall,
floor junction and window details, Mies van der Rohe,
Carr Chapel, 1949-1952*

The overall effect is of a tight fitting lid that looks as neat as a Christmas or birthday present wrapped up by the nimblest of fingers. Another way of looking at this is as per the modern obsession with packaging (as evidenced by videos online of people undoing new manufactured items and celebrating the whole experience from taking out of the box) or precision engineering of a lid being able to neatly click tightly into place. The balance is remarkable. *wikiarquitectura* states that Mies followed the Golden Mean in proportions. Without accurate measurements this cannot be proven. However, visual inspection of the available drawings and photographs indicate a clear sense of proportion, which may well fit the Golden Mean, or perhaps in the Fibonacci form, of Le Corbusier's Modulator (Wiles, 2009) with whom Mies had some dealings (Mies Society, 2016).

There is an early photograph, as *photograph 3*, where there was an upper row of widow lights, not seen in the majority of photographs where the glazing was renewed. These taken, together with the lower lights and the remaining lights (window section as whole panes), the glazing sections (all the framework that goes to holding the glass in place), the entrance doors and its sections, then the glazing viewed in conjunction with the side vertical wall panels, form a harmonious whole and symmetry which could almost be classical in proportions, something that a modern day Palladio would be proud of. There are other symmetries as well, the hedges on either side (later additions), the column radiators just visible inside (these could be early due to the nature of the type of radiator). Taken, all in all, the dark sections, the white sections, the brickwork, they form slabs of patterns that are architecturally neat or sophisticated. Architects spend hours agonising about window sections, the width, their visual arrangement, the joints, how to structurally span, whilst holding the glass in place, how not to obstruct sight lines, to give clarity of sight both in and out and passage of light into the interior. All these have been dealt with deceptive simplicity—and like music, fit together in a form that does not obtrude, yet lets the music sing out, the harmonious design.



wikiarquitectura

photograph 3: Early photograph showing upper row of vent lights, and five equal vertical bands and six broad horizontal bands including step
Mies van der Rohe, 1949-1952

Part of this has been lost in the restoration, because the upper row of lights has gone. The window panes are made larger, more light will be admitted, because of the trimming down of glazing members, but the later modernization has lost a little bit of that Mies magic. Only a bit and probably not many people notice this. It is, musically, as if someone wanted a change that seemed reasonable, to a composition, yet to the composer ruins the whole piece, because all the inner relationships have been shattered. That is how it may seem to the composer, yet to outsiders it may all seem perfectly arranged. In reality, some suggested changes from outside can be beneficial, with an improved result, where the design has gone through various stages and ended up improved, terser, tighter, more coherent, sometimes, not always. Sometimes the composer does not want more coherency, especially with modern compositions, where freedom and subtle points of expression can be hidden in the music for listeners

to find as gems embellishing a well-crafted necklace or broach. The same can go for a modernistic architectural design where all the thought that goes into forming the structure adorned with the enveloping walls, windows, doors and other details hold inner stories of construction. Here it seems likely that Mies would in fact like coherency. The whole ensemble is patent to see, transparent with no hidden agenda (except for the remark above about students and staff being able to understand the building, yet it is composed or designed for the world), a perfect miniature with regular features saying let's not complicate religion, let's make it accessible to all—just look through the window and see: the object of looking is the uncomplicated cross with curtain behind (perhaps a concession to the Jewish 'temple veil', also a plain device providing a demarcation barrier or screen from some sort of vestry area, where necessary accoutrements, like registers, vestments and instruments for the sacraments are kept) and the plain altar.

This is made clearer by having windows only to the front and with few other distracting items, such as simple wooden side benches (normal for servers assisting the celebrant). The altar is 'plain', yet 'monumental' to use Mies's word. Made out of a solid block of marble with simple inscribed crosses on the top four corners, this needs no further dressing of altar cloths. It springs from the floor and is aesthetically something that is not ostentatious yet quietly asserts its presence, waiting, inviting closer inspection. One wonders how it got there, what its provenance was, yet none of this matters, it just *is* there, unmoving, solid, massive, yet beautifully proportioned, part of the central focus of view, supporting and juxtaposing the simplicity of the bright and shining stainless steel cross. The proportions of the cross look perfect. Since Mies also designed chairs (Burton, 2018), which necessitates careful consideration of many design parameters, he would undoubtedly have put thought into designing this most central item of the church. So, what proportions are critical here, how does it relate to the whole? The casual observer through the front window assembly can take all this in at a glance and maybe say to herself or himself, I think I'll just take a look inside. It is patently welcoming. The doors are just there. There is no keep out sign. Rather, the whole building passively waits for you to make just a little move towards it.

These front views are shown in numerous photographs, of which the first *photograph 1* is just one example. In fact, the number of photographs available online,

which are probably only an indication—there are likely to be many more in people’s collections— are an attestation to the allure and popularity of this building.

There could be another reason for the curtain, a more prosaic reason, or simply a sensible one, which united with the other reasons given could add to their collective design good sense, and that is as united with another deliberate feature: as regards the roof principal beams. Normally, in order to take the loadings and transmit them via the walls to the foundations and then the ground, the beams would be placed at their shortest span, which is transversely, that is from side wall to the opposite side wall. But, Mies has chosen to span the longer way, which means more stress will be put on the beams and they should be bigger to carry the load of whatever is above them, other secondary beams, the roof and weather loadings such as snow. The reason is obvious, that he wanted to place all visual interest upon the cross and altar with the curtain behind. By placing the beams this way around the lines of sight drawn by the beams operate longitudinally as envisaged from the outset in his sketch, *figure 4*. As if by a miracle, the size of these beams seem intuitively (without the luxury of seeing any structural calculations) somehow to getting away with being small, even undersize.

One of the photographs, as *photograph 4* below, however, shows a small halfbrick wall (a wall 4inches, or 100mm roughly, in width, the approximate width of half a length of a brick) tucked just behind the curtain. This will give some relief to the load being carried. Again, in what appears to be typical Mies design, this wall is pared down to the minimum. Usually such a wall would be one brick wide, the width of a whole brick’s length, from the point of view of structural stability. Yet, this wall does not appear to have suffered in any way from buckling or shown any signs of collapse. It is another case of designing down to the bare minimum. There does also appear a transverse main beam above this wall, which goes against what is being said here. There is also another photograph, *photograph 5*, showing another main or principal beam somewhere along the span between the front and this brick support just behind the curtain. So, in a way, what is happening is that what looks like main or principal beams, are in fact secondary beams, and just, to all intents and purposes, to a casual observer, seem like main beams, and or they could, sort of, act as main beams anyway between the supports at either end, the support behind the curtain, and an additional support at mid span.



metalocus

photograph 4: Detail showing junction of main beam, secondary beams and halfbrick wall, also, lighting and underside of concrete pot roof decking, Carr Chapel, Chicago, Mies van der Rohe, 1949-1952

The lighting is surface mounted on the steel beams above and as fittings are appealing, straightforward honest adjustable spotlights with a self-finish blending well with the beams. The cabling is not visible, which is probably just how Mies would have liked it. He seems to have been an early exponent of the honest approach in architecture of showing how things are made, of what they consist (Mies Society, 2016), but as for showing cables, he probably would have liked the neat expedient of hiding them within or on the beam somehow. Incidentally, there does look like a high level window vent system at the back behind the curtain. Whether this is a later addition or not is not clear from drawings and other photographs available. They may have been added for through ventilation and in compliance with some later health and safety regulation, dating from after the initial construction.



metalocus

photograph 5: Detail showing main beam at mid span between front and altar, cross and curtain, Carr Chapel, Chicago, Mies van der Rohe, 1949-1952

It is possible that the introduction of transverse main beams was introduced in the new works of 2008-2013/2014, since the roof was completely renewed. Possibly structural calculations were carried out necessitating a new configuration. If this is the case the looks of the beams as passing from the front to the altar position have been maintained, so what looks like main or principal beams are in the new format secondary beams. The original concept design drawings show the main beams as spanning from front to back (the I sections shown) as *figure 4* and the looks of the beams as passing from front to back are shown in *photograph 4* and *5*. This is especially noticeable in *photograph 5*, the view that would be first encountered from the front window position. The original sketch as *figure 3*, shows some indication of piers or some sort of intermediate support, however, it is known that Mies wanted clear uninterrupted spans of walling. This would go along with his wish for a clear and simple uncluttered design, inviting accessibility and, importantly, allowing as

much light as possible to flood the whole interior (Jentes, 2010). So it must have been a fairly early decision of his to not have piers or any intermediate supports.



metalocus

photograph 5: Internal view of roof showing beams passing from front to back, looking like principal beams, in fact secondary. Note the alignment with the window vertical members, the mullions, a typical Mies touch, Carr Chapel, Chicago, Mies van der Rohe, 1949-1952

Having examined Mies's design philosophy, the history and vagueries of the Carr Chapel, one further point is worth making, and that is as regards nature. Mies wanted to bring nature into the equation of architecture, for people to see from inside buildings and enjoy all around them (Burton, 2018; Mies Society, 2016). Again, referring to the many photographs on the Carr Chapel available online, invariably they include a tree or more than one in the shot. There is one tree in front of the building which almost adds a picaresque view of the building. The hedges at either side of the front added some time after when the building was first built attest to how people respond to the building this way. The grass around is a designed feature of

Mies's, since it was he who first set out the offset grid pattern making sure to have open spaces in between buildings, as in his 1939 master plan for the layout of IIT (Mies Society, 2016). In many ways Mies was an innovator, whilst also designing with a formula as outlined in the foregoing, yet with a spark that always kept his designs alive, vibrant and appealing to so many people. The secret that is Carr Chapel is an unfolding enigma, that defies any building defects, any exorbitant costs to rectify, leaving such matters irrelevant. It is a fairyland story of enchantment and wonder.



wikiarquitectura

*photograph 6: Picaresque view of Carr Chapel with tree,
Carr Chapel, Chicago, Mies van der Rohe, 1949-1952*

References:

archiseek. (2009). '1952 – Chapel of Saint Savior / Robert F. Carr Chapel, IIT, Chicago', 17 September. Available at: <http://archiseek.com/2009/1952-chapel-of-saint-savior-robert-f-carr-chapel-iit-chicago>. Accessed: 07.12.2018.

Burton, Katrina. (2018). *Music and Place*, Music created for Mies van der Rohe's Carr Chapel, Illinois Institute of Technology, [video] Access Contemporary Music and Open House Chicago, Jason Raynovich, cello, Kim Schlechter, film, Colin Harris, sound, Joanna Stark, cello, Craigsbank Church, Andrew Stevenson, Photography; Edinburgh Napier University, 10 June. Available at: <https://www.youtube.com/watch?v=-ZUC1QsxsOQ>. Accessed: 07.12.2018.

Dignity Memorial. (2018). *Robert F. Carr, obituary, 01 February 1931-18 May 2018*. Available at: <https://www.dignitymemorial.com/obituaries/alexandria-va/robert-carr-7856352>. Accessed: 10.12.2018.

Jentes, Justine. (2010). *Mies van der Rohe Society, A Carr Chapel Update*. Available at: <http://blog.miessociety.org/post/14168846972/a-carr-chapel-update>. Accessed: 07.12.2018.

Knoll. (2018). 'Memorial Chapel at IIT, The Mies Society Honours Ludwig Mies van der Rohe's only ecclesiastical work'. *Knoll*. Available at: <https://www.knoll.com/knollnewsdetail/Ludwig-Mies-van-der-Rohe-Memorial-Chapel-IIT>. Accessed: 07.12.2018.

Mies van der Rohe Society. (2016). *The Story*. Available at: <http://miessociety.org/mies/projects>. Accessed: 11.12.2018.

Pérez, Branly, Ernesto. (2015). *Metalocus*, 22 November. Available at: <https://www.metalocus.es/en/news/mies-van-der-rohe-iit-chicago>. Accessed: 07.12.2018.

The Rector and Visitors of The University of Virginia. (2018). 'Jefferson's Masterpiece'. *University of Virginia*. Available at: <http://www.virginia.edu/visit/grounds>. Accessed: 11.12.2018.

The Organ Historical Society. (2016). The OHS Pipe Organ Database, Owner, originally built by Kilgen – Opus 7165, 1947. Available at: <https://pipeorgandatabase.org/OrganDetails.php?OrganID=54954>. Accessed: 11.12.2018.

Wiles, Will. (2009). 'Modular Man by Le Corbusier'. *Icon*, 23 June.

wikiarquitectura. (n.d.). 'Robert F. Carr Memorial Chapel of St. Savior'. Available at: <https://en.wikiarquitectura.com/building/robert-f-carr-memorial-chapel-of-st-savior>. Accessed: 07.12.2018.